UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,385	07/29/2003	Soroush Ghanbari	1906-0119P	3942

2292   7590   07/18/2008
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER
VO, TUNG T

ART UNIT	PAPER NUMBER
2621	

NOTIFICATION DATE	DELIVERY MODE
07/18/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

	Application No.	Applicant(s)
	10/628,385	GHANBARI ET AL.
Office Action Summary	Examiner	Art Unit	
	Tung Vo	2621	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 June 2008</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,3-10,15 and 18-23</u> is/are pending in the application.

    4a) Of the above claim(s) <u>2,11-14,16 and 17</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,3-10,15 and 18-23</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>29 July 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 06/26/08 has been entered.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

3.   Claim15 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter.   Claim 1 defines a computer-readable medium embodying

functional descriptive material. However, the claim does not define instructions stored on a

computer-readable medium or computer-readable memory, that instructions are not functionally

interrelated to the computer-readable medium, and is thus non-statutory for that reason (i.e.,

"When functional descriptive material is recorded on some computer-readable medium it

becomes structurally and functionally interrelated to the medium and will be statutory in most

cases since use of technology permits the function of the descriptive material to be realized" -

MPEP 2106.01 I). The scope of the presently claimed invention encompasses products that are

not necessarily computer readable, and thus NOT able to impart any functionality of the recited

program.

Note:

A "signal" (or equivalent) embodying functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101. Rather, "signal" is a form of energy, in the absence of any physical structure or tangible material.

Should the full scope of the claim as properly read in light of the disclosure encompass non-statutory subject matter such as a "signal", the claim as a whole would be non-statutory. The examiner suggests amending the claim(s) to embody the computer program on "computer-readable medium" and deleting in the specification all sections defining or equivalent, the computer readable medium as a "signal", "carrier wave", "transmission medium", or "paper" which are deemed non-statutory (refer to "note" Above). Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 1 and 3-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Jung (US 5,825,423).

Re claim 1, Jung discloses a method of approximating a motion vector for an image block for concealment of a lost or damaged motion vector (fig. 2), comprising the steps of:

deriving a first set of vectors from motion vectors of neighbouring blocks in the same

frame and the corresponding block and its neighbouring blocks in one or more preceding and/or

subsequent frames (e.g. 202 and 214 of fig. 2);

deriving a set of candidate vectors from one or more of motion vectors of neighbouring

blocks in the same frame and the corresponding block and its neighbouring blocks in one or

more preceding and/or subsequent frames (e.g. 216 of fig. 2);

deriving an estimated motion vector from the first set of vectors (e.g. 214 and 316 of fig.

3);

comparing the candidate vectors with the estimated motion vector (222 of fig. 2); and

selecting one of the candidate vectors on the basis of similarity to said estimated vector

(224 of fig. 2).

Re claim 3, Jung further discloses wherein the first set of vectors and the set of candidate

vectors are the same (222 of fig. 2).

Re claim 5, Jung further discloses wherein the similarity to the estimated vector is

defined in terms of distance, size, or direction (figs. 1A-1C).

Re claim 6, Jung further discloses wherein the vector that is closest or second closest to

the estimated vector is selected (114 of fig. 2, a vector is selected).

Re claim 7, Jung further discloses wherein the estimated motion vector is the mean of

two or more or all of the elements of said first set (410, 412, and 414 of fig. 4).

Re claim 8, Jung further discloses wherein the mean is a weighted mean (fig. 3, note the

output signals from each of the motion vector detection blocks are an average of the error signals

and a set of motion vectors for each of the codeword, which will also be described hereinafter
with reference to FIG. 3).

Re claim 9, Jung further discloses wherein motion vectors of neighbouring blocks are
weighted according to their position in relation to said image block or their similarity to the
motion vector of the block corresponding to said image block in the preceding or subsequent
frame (figs. 1A-1C).

Re claim 10, Jung further discloses wherein the selection takes into account motion
boundaries (fig. 1C, note there are two boundaries therebetween: one boundary is the actual
boundary of the two moving objects and the other is a rough boundary approximated to the
actual boundary according to a moving object pattern).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 1, 3-10, 18-19, and 21-23 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Kim (US 5,912,707).

Re claims 1 and 21, Kim teaches a method of approximating a motion vector for an
image block for concealment of a lost or damaged motion vector (fig. 1), comprising the steps of:

deriving a first set of vectors from motion vectors of neighbouring blocks in the same frame and the corresponding block and its neighbouring blocks in one or more preceding and/or subsequent frames (200 of fig. 2; e.g. 210 of fig. 2);

deriving a set of candidate vectors from one or more of motion vectors of neighbouring blocks in the same frame and the corresponding block and its neighbouring blocks in one or more preceding and/or subsequent frames (e.g. 220-260 of fig. 2, e.g. 250 of fig. 2, calculating the differences two pairing adjacent pixel values, which would obviously be considered as a set candidate vectors from one or more of motion vectors of neighbouring blocks, e.g. 210 of fig. 2);

deriving an estimated motion vector from the first set of vectors (e.g. 211-213, L220 of fig. 3);

comparing the candidate vectors with the estimated motion vector (e.g. 270 of fig. 2); and

selecting one of the candidate vectors on the basis of similarity to said estimated vector (e.g. 270 of fig. 2).

Re claim 3, Kim further teaches wherein the first set of vectors and the set of candidate vectors are the same (e.g. 270 of fig. 2, the comparison process would have the results of the first set of vectors and the set of candidate vectors are the same).

Re claim 5, Kim further teaches wherein the similarity to the estimated vector is defined in terms of distance, size, or direction (e.g. 211-213 of fig. 3).

Re claim 6, Kim further teaches wherein the vector that is closest or second closest to the estimated vector is selected (e.g. 213 of fig. 3).

Re claim 7, Kim further teaches wherein the estimated motion vector is the mean of two or more or all of the elements of said first set (e.g. 212 of fig. 3).

Re claim 8, Kim further teaches wherein the mean is a weighted mean (e.g. 211 of fig. 3).

Re claim 9, Kim further teaches wherein motion vectors of neighbouring blocks are weighted according to their position in relation to said image block or their similarity to the motion vector of the block corresponding to said image block in the preceding or subsequent frame (e.g. 211 of fig. 3; col. 3, line 45-col. 4, line 36).

Re claim 10, Kim further teaches wherein the selection takes into account motion boundaries (fig. 6).

Re claim 18, Kim further teaches a data decoding means (400 of fig. 1) for decoding received data according a coding technique; error detecting means (100 of fig. 1) for detecting errors in the decoded data; and a motion vector estimator (200 of fig. 1, see figure 2) configured to perform the method above and error concealing means.

Re claim 19, Kim further teaches a receiver for a communication system or a system for retrieving stored data comprising: an apparatus a transceiver for transmitting and receiving data; and a decoder (e.g. fig. 1).

Re claim 22, Kim further discloses wherein if the vector correlation indicates a high correlation between the first set of vectors and the neighbouring motion vectors in the preceding or subsequent frame of the candidate set then the motion vector of corresponding block in the preceding or subsequent frame is selected as the approximated motion vector(e.g. 211 and 212 of fig. 3).

Re claim 23, Kim further teaches wherein if the vector correlation indicates a low correlation between the first set of vectors and the neighbouring motion vectors in the preceding

or subsequent frame of the candidate set then the motion vector is approximated using motion

vectors from the first set of vectors (e.g. 213 of fig. 3;).

8.   Claims 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim

(US 5,912,707) in view of Henning (US 7,133,455 B2).

        Re claims 15 and 20, Kim does not particularly teach a computer-readable medium

storing instructions that, when executed, perform a method as claimed and a mobile videophone.

        Henning teaches a computer-readable medium storing instructions that, when executed,

perform a method (e.g. 22 of fig. 1) and a mobile videophone (e.g. 25 of fig. 1).

        Therefore, taking the teachings of Kim and Henning as a whole, it would have been

obvious to one of ordinary skill in the art to incorporate the teachings of Henning into the

apparatus of Kim to improve coding efficiency since fewer bits may be used for error resilience.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

        Park (US 6,219,383) discloses method and apparatus for selectively detecting motion

        vectors of wavelet transformed video signal.

Contact Information

        Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The

examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the
organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published applications
may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
applications is available through Private PAIR only. For more information about the PAIR
system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR
system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would
like assistance from a USPTO Customer Service Representative or access to the automated
information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tung Vo/
Primary Examiner, Art Unit 2621